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REPORT N°: RHN12028

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Resins received from

Distributor / OEM: Jonbytesteknik

Contact name: Olle Anell

End user: Hallstavik plant

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1. OBJECTIVE & RECEIVED SAMPLES

We have received one sample of ion exchange resins used in water demineralisation since 1.5years:

- Lewatit™MP64.

The objective of the analysis is to determine the origin of short cycle length and long rinse time.

2. RESIN STATUS

As received the sample is clean.

The total capacities are down by about 25%.

There is a degradation of the salt splitting capacity.

Additionally the organic loading is higher than the tolerated maximum.

3. CONCLUSIONS AND RECOMMENDATIONS

The chemical characteristics show a chemical degradation for which the usual consequences are:

- Poor quality of treated water (low pH, high leakage)
- Long rinse time
- Short cycle length

This type of issue appears slowly and is due to the ageing of the resin and operating conditions. The chemical degradation is irreversible.

In the present case the resin should be replaced. Before the loading of the fresh resin the vessel should be perfectly cleaned to remove old resin.



4. RESULTS

Resins		LEWATIT MP64	
Type		Weak base anion	
In use since	Year	1.5	Fresh resin
References	Units	Train A	PDS* Reference values

Chemical characteristics:

Total volume exchange capacity	Eq/L FB	1.02	1.4*
	Eq/L HCl	0.87	
Total weight exchange capacity	Eq/kg FB	3.75	5.0
Salt splitting capacity	%	1.0	10
Moisture Holding capacity	% FB form	59.0	57-63*
Swelling	% FB→HCl	16.3	35*
Organic Matters	g O ₂ /Lr	3.5	≤ 3

Physical characteristics:

Perfect beads	%	100	
Whole beads	%	100	95 min

